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ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, Governor

TOXIC SUBSTANCES CONTROL



**INITIAL STUDY AND INFORMATION
IN SUPPORT OF
A NEGATIVE DECLARATION
FOR
PERMIT MODIFICATION OF THE SITE CLEAN-UP PROJECT
AT
PHIBRO-TECH, INC., SANTA FE SPRINGS FACILITY
LOS ANGELES COUNTY, CALIFORNIA
EPA I.D.# CAD006233966**

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INTRODUCTION

Status

The Department of Toxic Substances Control (Department) is initiating a Class III Permit Modification for implementation of selected Corrective Measures for soil and groundwater contamination at the Phibro-Tech, Inc. (PTI, a.k.a. Southern California Chemical, a.k.a. CP Chemicals Inc., a.k.a. Entech Recovery, Inc.) Santa Fe Springs facility. This pertains specifically to Section V of Corrective Action of Solid Waste Management Units (SWMUs) of the existing State Hazardous Waste Facility Permit No. 91-3-TS-002.

This permit modification will be authorized pursuant to Section 25200.10 of the California Health and Safety Code (HSC); Section 66270.41 of Title 22 of California Code of Regulations (22 CCR 66270.41); and Sections V.D.3 and V.D.4 of the identical State and Federal RCRA permits. Note that the Department had not been authorized to issue a RCRA-equivalent permit when PTI received the State Permit in 1991, and therefore the facility now has two similar permits, issued through two different agencies at federal and state levels. The Department subsequently received the authority from the U.S. Environmental Protection Agency (EPA) to issue a RCRA-equivalent or more stringent hazardous waste transfer, storage, treatment and disposal permit on August 1, 1992. Pursuant to this authority and the Department's effort to simplify the permit issues to avoid overlapping of the permit processes and saving the state resources, this modified State Permit would become the Facility's single permit and supersede the Federal RCRA Permit which had been issued in July 29, 1991. The modified permit would be in effect after the public comment period if the Department does not receive any comments from the public and would expire the same day as existing permit in July 29, 1996.

Regulatory History

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PTI (then SCC) submitted a Part A permit application in September 1980 in order to comply with the Resource Conservation and Recover Act (RCRA) regulations. As part of Phase I environmental monitoring study conducted in 1985, PTI installed 7 wells and began groundwater monitoring at the facility. Sampling of these wells revealed the presence of chromium, cadmium, TCE, ethylbenzene, toluene, and xylene in the groundwater.

EPA contractors conducted a RCRA Facility Assessment (RFA) of the site in 1987 which determined that releases of hazardous materials had occurred in the past at the facility and that corrective action was necessary. In December of 1988, EPA and

PTI signed a consent agreement (Administrative Order on Consent, Docket No. RCRA-09-89-0001). The consent agreement required SCC to conduct a RCRA Facility Investigation (RFI), Corrective Measures Study (CMS) and Pre-Investigation Evaluation of Corrective Measures (PIECM). Under the auspices of the Los Angeles County Department of Public Works (LACDPW), the local agency responsible for addressing hydrocarbon releases from underground storage tanks (USTs), PTI removed an underground tank system in July 1989. This system consisted of two fuel 10,000 gallon tanks, one diesel and one gasoline, and appurtenant piping. The system was determined to have released petroleum hydrocarbon compounds to the subsurface. In order to reduce program overlap, EPA and LACDPW agreed that the UST area investigation would be incorporated into the RFI work.

RFI field work and draft report development took place in two phases between 1990 and 1992. Phase I RFI reports were submitted in June and September 1991 and certain areas at the site were identified by EPA in their review report as requiring further investigation. A Phase II RFI was conducted during the period March 12 to April 14, 1992, and a draft report was submitted on July 20, 1992. In response to EPA's review comments the revised report was submitted on February 5, 1993.

The EPA required that PTI conduct a site-specific Risk Assessment to evaluate potential impacts to human health from the soil and groundwater contamination. The Risk Assessment included RFI data evaluation, an exposure assessment, a toxicity assessment and a risk characterization. The draft Risk Assessment report was submitted to EPA on July 20, 1992. Several revisions, submitted on October 29, 1992, February 5, 1993, and April 23, 1993, were required by EPA. On August 2, 1993, EPA approved RFI Phase II Report, RFI Executive Summary, and RCRA Facility Risk Assessment Report, all dated April 23, 1993. Subsequently a CMS Report, dated August 27, 1993, identified and evaluated the potential corrective measures to address soil and groundwater contamination at the site.

I.0 PROJECT DESCRIPTION

The Department of Toxic Substances Control (Department) is initiating a Class III Permit Modification for the Section V, Corrective Action of Solid Waste Management Units (SWMUs), of the existing state Hazardous Waste Facility Permit, Permit No. 91-3-TS-002, for implementing the selected Corrective Measures to remediate, monitor and contain soil and groundwater contamination at the Phibro-Tech, Inc. (PTI, a.k.a. Southern California Chemical, a.k.a. CP Chemicals Inc., a.k.a. Entech Recovery, Inc.) Santa Fe Springs facility. The project is to issue a Permit Modification requiring implementation of

selected corrective measures at PTI which are largely derived from PTI-submitted information, such as RCRA Facility Investigation (RFI) Phase I and Phase II Reports, Corrective Measures Study (CMS) Report as well as information from other sources.

Background

PTI presently operates as a hazardous waste facility under state permit No. 91-3-TS-002, as well as under a federal RCRA permit. Effective and expiration dates for these identical permits are July 29, 1991 and July 29, 1996, respectively. In addition, PTI currently operates under an Interim Operating Plan while a revised Conditional Use Permit is being developed by the City of Santa Fe Springs.

PTI receives a variety of aqueous hazardous wastes and recyclable materials from the electronics and aerospace industries. Some of the wastes and recyclable materials include spent enamels, solder strippers, pickling acids, plating solutions, conditioners, and brighteners. These wastes variably contain copper, iron, ammonium, bifluoride, tin, lead, chromium, nickel, assorted trace heavy metals, sulfates, chlorides, and hydroxides. These materials are treated through neutralization and other processes to generate new products for sale. PTI discharge aqueous wastes to the sanitary sewer pursuant to a permit granted by Los Angeles Sanitation District (LACSD). Sludges generated by the facility are transported to a heavy metal smelter/ producer for recycling.

PTI operates a variety of waste management units with manufacturing and operational equipment including reactors, settling tanks, holding tanks, wastewater treatment tanks, filter presses, process and storm drain sumps, drum storage areas, and drum and truck washing areas. The approximate facility layout is shown on the map in Attachment 2.

Various environmental problems led to the detailed investigation of PTI (under predecessor names). EPA verified that past disposal and spills had occurred on site in July 7, 1983. Early soil and groundwater samples from near a surface impoundment indicated high levels of various heavy metals in soils and that ground water was contaminated with cadmium, hexavalent chromium, and chloride. As a result of these early investigations, a RCRA Facility Assessment (RFA) was conducted by EPA contractor in 1987 to identify areas where the potential for chemical releases was significant. It was determined that corrective action might be necessary.

In 1988, EPA and PTI signed a consent agreement

(Administrative Order on Consent, Docket No. RCRA-09-89-0001) which required PTI to conduct a RCRA Facility Investigation (RFI), Corrective Measures Study (CMS) and Pre Investigation Evaluation of Corrective Measures (PIECM). EPA also required that PTI conduct a risk assessment to evaluate potential impacts to human health and the environment associated with exposure to the contaminants identified during the RFI under site-specific conditions. The risk assessment was intended to be the basis for development of corrective action objectives at the site. The CMS would then be conducted to evaluate and recommend the remedial technologies appropriate for each Solid Waste Management Unit SWMU. Corrective Measures would be then be implemented by the facility in a Corrective Measures Implementation (CMI).

Site Contamination

The RFI reports have identified that the soil and ground water are seriously contaminated at the site. The shallowest ground water, within the Hollydale Aquifer, beneath the PTI facility contains elevated levels of chromium, cadmium, toluene, ethylbenzene, xylene and trichloroethylene (TCE). Soils at the site contain elevated levels of (1) heavy metals, including lead, cadmium, chromium, and copper; (2) halogenated VOC's, including TCE, 1,2-DCA, and tetrachloroethene (PCE); (3) aromatic VOC's, including benzene, toluene, ethylbenzene and xylene; (4) polychlorinated biphenyls (PCB's); (5) petroleum hydrocarbons, including diesel fuel, gasoline and crude oil and (6) various inorganics such as chloride.

In addition to the work required by EPA under RCRA, two underground fuel storage tanks (USTs) were removed in July, 1989, under the auspices of the Los Angeles County Department of Public Works (LADPW) in response to the underground tank requirements of Chapter 16. Fuel hydrocarbons were found to have been discharged to the subsurface. Although LADPW is the local agency responsible for addressing hydrocarbon releases from USTs, EPA and LADPW agreed that the UST area investigation would be incorporated into the RFI work and remediation included under this project (Permit Modification).

Corrective Measures

Soil

The soil remedy consists of three elements, containment measures to prevent human contact with the contaminated soil, deed restrictions to limit future uses of the property and in situ vapor extraction and bioventing to cleanup soils in the halogenated contamination and the former underground storage tank areas. Remediation is not being proposed for the

cadmium, chromium, copper, lead, PCB or inorganic contamination in soils because these contaminants are not believed to pose a continuing threat to human health and the environment given proper deed restriction, comprehensive capping, careful site operation and maintenance, and adequate vadose zone monitoring. Similarly remediation is not being proposed for the crude oil contamination in soils because it is not a threat to human health and the environment given the deed restriction, capping and monitoring requirements. The April 23, 1993, RCRA Facility Risk Assessment Report provides a quantitative analysis of the chemicals of concern found at the site, exposure scenarios that depict expected exposure conditions and intakes, assessment of toxicity of chemicals under expected exposure conditions, and the evaluation of potential impacts to human health from surface soil contamination at the facility. The soil exposure pathways which may be relevant to the site for soil include dermal contact with soil, ingestion of soil and inhalation of soil particulates. The potentially exposed populations to these pathways could include on-site workers, off-site workers and nearby residents. The risk assessment concluded that risks from the contaminated on-site surface soils are acceptable for continued industrial use of the paved facility but are not acceptable for residential development. Thus, since the contaminated soil at the PTI facility will be wholly covered, exposure to contaminated soil from the site via the dermal contact, ingestion and inhalation pathways will be effectively prevented. Deed restrictions will prevent any future residential use of the property.

The general objectives for soil are as follows:

- Prevent human contact with the contaminated soils and minimize rainwater infiltration into subsurface soils by requiring that the facility construct and maintain a permanent site cover.
- Prohibit residential and other sensitive property uses through deed restrictions. Deed restrictions, which are discussed in more detail below, will also be used to prohibit the domestic use of shallow ground water (Hollydale Aquifer) beneath the facility, require a permanent site cover for any commercial and/or industrial uses of the property and to require that any construction activities minimize disturbance of contaminated soils.
- To reduce the concentration of benzene, toluene, ethylbenzene, total xylene and extractable TPH in the subsurface soils of the UGT area to specified levels by bioventing.

- To reduce the concentration of all halogenated volatile organics in the subsurface soils of those areas where such contamination is identifiable to specified levels by soil vapor extraction (SVE).
- To assure the success of the foregoing by comprehensive vadose monitoring.

The containment measures includes covering unpaved areas at the facility, routing inspection and maintenance at the all covered areas, evaluating the existing site drainage system and revising the facility approved closure plan to prevent removal of the site cover (pavement) when industrial operations have ended.

The deed restriction puts legally enforceable limits on the use of property. The deed restriction applies to the property and is not impacted by any ownership changes. In this case, The Department has prepared a deed notice that PTI must file with the County of Los Angeles. The deed restriction notice puts the following limits on the facility property:

- Prohibits the property from being used for residences, hospitals, schools, day-care centers and any permanently occupied human habitation, including hotels or motels which could be used as a residence for employees.
- Requires that the property be paved for any commercial and/or industrial use;
- Requires that any construction work on the property minimize excavation and/or earth moving activities such that disturbance of contaminated soils are minimized. Construction workers will be required to wear adequate protective equipment in order to minimize exposure to harmful soil contaminants; and
- Prohibits any domestic use of the shallow groundwater (Hollydale Aquifer) beneath the property.

The in situ bioventing is applied to degrade the benzene, toluene, ethylbenzene, xylene and diesel fuel in the former underground storage tank area. In situ bioventing consists of using wells to introduce air and nutrients into subsurface soils. The air and nutrients promote biological growth which acts to degrade the BTEX compounds and diesel fuel. The BTEX compounds and diesel fuel are degraded because they are used as a food source by the microorganisms.

The soil vapor extraction (SVE) is intended to remove vapor phase of volatile organic compounds such as trichloroethene (TCE). This consists of applying a low vacuum through extraction wells or trenches which advects contaminant vapor to the surface where it is captured on an adsorptive media such as activated charcoal.

Ground Water

The corrective action objective for ground water is to reduce hexavalent chromium, total chromium, cadmium, and halogenated volatile organic compounds (VOC's) concentrations at the compliance point to less than the Maximum Contamination Levels (MCLs) for drinking water. The MCL is the legally permissible level of a contaminant allowed in drinking water.

This action does not set corrective action objectives for the benzene, toluene, ethylbenzene, xylene--BTEX compounds, and other petroleum hydrocarbon compounds in the ground water, but instead defers to a future effort to address such contamination on a multi-site basis. Since the shallow groundwater contamination from these constituents appears due to multiple sites in the immediate area Santa Fe Springs area, that it will be more efficient to address this problem jointly with other facilities. The Department may require PTI to take additional action depending on the findings from further investigations from its or other sites in the area. However, any water extracted water to clean up other contaminants such as chromium or TCE will also be treated to remove the BTEX compounds and petroleum hydrocarbons as necessary before disposal.

The proposed remedy for contaminated ground water consists of pumping from extraction well(s) in the Hollydale Aquifer and continued groundwater monitoring. A comprehensive groundwater monitoring plan will be developed to ensure that any plume migration will be noted and appropriate action taken in response. The combination of actions will both protect human health and the environment while also restoring the beneficial uses of the Hollydale Aquifer. This is consistent with California groundwater policy which considers the Hollydale Aquifer as a potential source of drinking water that must be restored.

II ENVIRONMENTAL SETTING

A. Climate (Meteorology)

The project location lies within the semi-permanent high pressure zone of the east Pacific. The resulting climate is mild, tempered by cool ocean breezes but still semi-arid. This is large part controlled by the terrain, a broad basin with connecting broad valleys and low hills, coupled with the Pacific Ocean forming the southwestern border and high mountains surrounding the rest of the basin. Although rarely interrupted, there do exist periods of extremely hot weather, winter storms and Santa Ana wind conditions. For climatological and air quality purposes this is considered the South Coast Air Quality Basin (SCAB) and includes Orange County, non-desert parts of Los Angeles, Riverside and San Bernardino counties.

The average temperature varies relatively little, ranging from the low to middle 60s in degrees Fahrenheit (°F). Based on the California Climatological Data Annual Summary (NOAA, 1992), the climate station nearest to the project area is the San Gabriel Fire Station. During 1992 this station monitored a monthly average temperature ranging from 55 to 75°F with an annual average of 64°F. All areas within the basin have recorded temperatures above 100 °F areas nearby the project have historical extremes of 18°F and 116°F.

The majority of annual rainfall occurs between November and April. Summer rainfall is minimal and generally limited to scattered to slightly heavy thundershowers. At the San Gabriel Fire Station, the average annual rainfall over the last 50 years is 18 inches, varying between 4.5 inches in January to less than one inch between May and October. Precipitation is exceeded by evaporation during most of the year with the rate of evapo-transpiration ranging from 0.97 inches per acre in January, to 6.13 inches per acre in July. Over a 30-year period for the Los Angeles area the total average annual rate is 38.96 inches per acre.

Even though there is a semi-arid climate, the air near the surface is generally moist due to the presence of a shallow marine layer. Although, downtown Los Angeles wind speeds averages 5.7 miles per hour (MPH), wind speeds of 0 to 3 miles per hour makes up one third of the prevailing wind. With such very low average wind speeds, there is limited capacity to disperse air contaminants laterally-vertical dispersion is limited by temperature inversions at low altitudes in the overlying atmosphere. The dominant wind pattern is an on-shore day-time breeze and an offshore night-

time breeze. The typical wind flow pattern fluctuates only with occasional winter storms or strong northeasterly Santa Ana winds from the mountains and deserts north of the project area. Wind speeds versus wind direction data collected during all weather conditions from the vicinity Long Beach Airport, 10 miles south of the project area, indicate: a) for wind speeds from 4 to 12 MPH, 8.4 percent of the wind blows from the south while 21.2 percent of the wind is distributed between west, west-northwest and northwest directions, b) for wind speeds 13 to 15 MPH, 0.9 percent of the wind experienced is from the south while 1.5 percent of the wind blows from the west and 0.8 percent is from the west-northwest direction.

B. Local Air Quality

The project site is located within Source/Receptor Area (SRA) 5, one of the thirty areas under the jurisdiction of the South Coast Air Quality Management District (SCAQMD) which maintains ambient air quality monitoring stations throughout the basin. Communities within any given SRA are expected to have similar ambient air pollutant concentrations as a consequence of similar local climatology. The Whittier air monitoring station in SRA 5 monitors four of the criteria pollutants: carbon monoxide, ozone, nitrogen dioxide, and sulfur dioxide (annual Air Quality Tables, SCAQMD). Particulate matter (PM₁₀) and lead levels are not monitored at this station. At present these have not become a concern to the SCAQMD or to the California Air Resources Board (CARB), provisions have been made add them if necessary. Other air pollutants for which standards exist are considered local problems and are handled through the District's permitting process for stationary sources. The PTI site is under the purview of such District permits.

Air quality trends, developed at the Whittier air quality station during 1990-1992, indicate that for that period the 1-hour carbon monoxide (CO), nitrogen dioxide and sulfur dioxide levels did not equal or exceed the relevant state and/or federal standards, while 8-hour CO and ozone have exceeded the state and/or federal standards. Ozone exceeded the state 1-hour standard 15 percent of the time during the last three years and the federal 1-hour standard 7 percent of the time. One first stage ozone episode (one-hour average greater than 20 pphm) was called at the Whittier station during that period, but no second or third stage alerts were called. The 8-hour state standard for CO was exceeded once during that period.

Toxic pollutants released to the atmosphere are regulated under Sections 44300-44384 of Division 26 of the Health and Safety Code (H&SC) also known as the Air Toxics "Hot Spots" Act of 1987. This established a statewide program to

inventory air toxic emissions from individual facilities such as PTI. It required that individual air pollution control districts, such as SCAQMD, prioritize and categorize pollutant emitting facilities as high or intermediate relative to health risk. Those facilities categorized as high priority must submit a health risk assessment (HRA) to the district; other facilities may also be required to submit HRAs according to the individual district's priorities. The SCAQMD has utilized a quantitative risk assessment process to determine allowable emissions from a given source rather than on ambient air concentrations. Out of the 12 listed and prioritized facilities that emit toxic air contaminants PTI is/is not one.

C. Geology

General Lithology and Stratigraphy

The project is located in the southwest 1/4 of the southeast 1/4 of the southeast 1/4 of section 30 of township 2 south, range 11 west San Bernardino baseline and meridian. This is ~~within the Santa Fe Springs Alluvial Plain, a continuation of the Coyote Hills Uplift to the southeast.~~ Upper Pleistocene-aged alluvium of the Lakewood Formation underlie the surficial soils. The Lakewood Formation unconformably overlies the lower Pleistocene San Pedro Formation, the Pliocene Pico and Repetto Formations, and the Miocene Puente Formation. Both surficial soils and geological materials underlying the facility are typical stream and flood plain-derived deposits. The deeper geological materials (below the soil profile) consist of sequences of fine-grained materials (silts and clay size) and coarser-grained materials (sand size). The regional stratigraphy consists of interbedded fine-grained materials and sands. The information derived from lithologic logs of the monitoring wells and exploratory soil borings reported in the RCRA Facility Investigation (RFI) report confirms that the site-specific data are in general agreement with regional information.

Paleontological Resources

The geologic environment in the project area is such that fossiliferous materials are not probable. No exposures of bedrock occur at the site nor adjoin it. The high energy fluvial and alluvial materials which immediately underlie the site are not conducive to the preservation of Pleistocene materials which may have been deposited therein. No oil seeps of the Rancho La Brea type are recorded in the immediate vicinity.

Structure

Structurally, the plain is underlain by Santa Fe Springs

anticlinal dome which trends northwest and is symmetrical with gently dipping flanks. Several miles to the northeast, the Whittier Fault Zone, trends southeast along the southern flanks of the Puente Hills. It extends from the Whittier Narrows into Orange County. The plain dip gently both to the northeast toward Whittier and to southwest toward Downey Plain with elevation different of 175 to 200 feet above sea level (DWR, 1961).

The uppermost lithologic unit in the geologic materials is the Bellflower aquiclude, from 10 to 15 feet thick, which consists of clays to sandy clays. The Gage Aquifer, from 15 to 30 feet bgs underneath the Bellflower aquiclude, is a sandy materials and dry beneath the PTI site. Below the Gage is a layer of fine-grained materials (clay and silt), from 30 to 55 feet bgs. The Hollydale aquifer starts at 55 feet bgs and is nearly 40 feet thick throughout most of the site and is saturated. There is possible of the exchange of water between Hollydale aquifer and the underlying Jefferson aquifer at the site.

Seismic

The City of Santa Fe Springs is located in the vicinity of several known and potentially active seismogenic faults. The more commonly known include the San Andreas, San Jacinto, and the Newport Inglewood. At a distance from the City must also be included the Sierra Madre Fault, Santa Monica Fault and the San Jose Hills Fault. The City is bracketed relatively near-field by the Whittier -Elsinore (known active) to the north and the Norwalk Fault (considered potentially active) to the south. Moreover, there is every possibility that concealed or so-called "blind" thrusts may exist in the basin underlying the City as does the Elysian Park Ramp with respect to downtown Los Angeles. Finally, it is increasingly recognized that large folds such as the Puente Hills just to the north of the City frequently conceal seismogenic thrusts. The City has recognized in its General Plan Draft EIR that a major earthquake will cause serious problems, including hazardous materials spills. The City has been impacted by the 5.9 Whittier Narrows Earthquake of 1987, and to lesser degree by the 6.7 Northridge event of 1994. It should be noted that the Whittier narrows event occurred along a concealed fault. The Seismic Safety Mapping Act of 1990 required delineation of special hazard study zones, because this mapping is incomplete the City was unsure in its EIR whether all or parts of the City would fall into any such zone. No known "faultline" passes underneath the PTI site, however ground rupture is known to occur away from the main fault strands. The most likely effect will be groundshaking, which intensity will be determined by magnitude of the event, frequency content of energy released, depth of energy release, distance from

hypocenter and characteristics of surface and subsurface materials between the energy release and the site. Liquefaction is another possible earthquake effect, especially under conditions of localized high water table and in medium-to fine-grained non-cohesive deposits. The nearest segment of the San Andreas has the potential to produce a magnitude 8.0 or greater event. With the last major event having been the Fort Tejon earthquake of 1857, and a recurrence interval of 131 +/- 30 years, there is probability that such an a major event could affect the site during the life of the project.

Site-specific Conditions

The RFI reported that the soils at the facility contain elevated levels of benzene, cadmium, chromium, copper, ethylbenzene, lead, polychlorinated biphenyls (PCB's), toluene, xylene, diesel fuel and crude oil. Low levels of TCE have also been detected in the soils at the facility.

For easier recognition, the soil contaminants have been separated into five groups. Each group is described below:

Hydrocarbon and BTEX Contamination: The soils beneath two former underground fuel storage tanks (USTs) contain elevated levels of benzene, toluene, ethylbenzene, xylene and extractable total petroleum hydrocarbons (TPH). The two USTs (1 diesel, 1 gasoline) were removed from the facility in July 1989. Due to the preponderance of extractable TPH versus volatile TPH, DTSC and EPA have concluded that the contamination is related to diesel fuel. In addition, separate areas of the facility are contaminated with longer chain hydrocarbons believed to be crude oil. The crude oil was distinguished from the diesel fuel by using a carbon chain analysis. UST area hydrocarbon contamination is limited to the unsaturated zone and ranges in depth from about 5 to 37 feet. The exact boundary between the diesel fuel and crude oil areas is not known.

Nine of the eleven deep borings in the UST area have extractable TPH concentrations above the California Leaking Underground Fuel Tank Manual, Guidelines for Site Assessment, Cleanup and Underground Storage Tank Closure, dated October 1989 (LUFT manual) action level of 1000 mg/kg at depths to 33 feet, four of the eleven borings had benzene above the action level of 0.3 mg/kg at depths to 37 feet, six of the eleven boring had ethylbenzene above the action level of 1 mg/kg at depths to 28 feet, 2 of the 11 borings had toluene above the action level of 0.3 mg/kg at depths to 33 feet and 6 of the 11 borings had xylene above the action level of 1 mg/kg to depths of 28 feet.

In addition to the deeper borings, five hand borings were done

in the floor of the UST excavation pit. Soil from all five hand borings exceeded the action levels for TPH, benzene, ethylbenzene and xylene. Soil from four of the five hand borings exceeded the action level for toluene.

Heavy Metals and PCB's in Shallow Soil: Shallow soils at the facility contain elevated concentrations of chromium, copper, lead, nickel and PCB's. These contaminants are widely spread across the facility and exist at depths ranging from the surface to approximately 6 feet. Maximum concentrations: chromium (total) - 37,000 mg/kg, copper - 23,000 mg/kg, lead - 113,000 mg/kg and nickel - 11,800 mg/kg. PCB's (Aroclor-1260) were detected in the surface soils in the west parking lot (off-site) and the ferric chloride rehabilitation area (southwest corner). Maximum PCB concentrations in surface soils at the off-site west parking lot range from 100 to 1,500 mg/kg. Maximum on-site PCB concentrations in the Ferric Chloride Area range from 69 to 710 mg/kg.

Chromium in Deeper Soils: Elevated levels of hexavalent chromium were detected in soil boring SB-7 near the former waste chromic acid tank area. The waste chromic acid tank was used for the underground storage of spent chromic-sulfuric acid etching wastes from 1960 to 1974. These etching wastes contained chromium and copper. Boring SB-7 has elevated hexavalent chromium concentrations from the surface down to 40 feet. Concentrations range from 73.2 mg/kg at the surface to 1,160 mg/kg at 40 feet. The tank was removed in 1974 and was once considered by PTI to be a likely source of chromium in the groundwater at well MW-4. However, an evaluation of groundwater data from well MW-9, which is located immediately downgradient from the SB-7 area, suggests that the SB-7 area may not be the source of chromium contamination in well MW-4. This evaluation revealed that chromium has been detected in well MW-9 but at concentrations that are at least 45 times less than those found in well MW-4. The timing of when the chromium has been detected in the two wells is also not consistent. For example, chromium was not detected in well MW-9 from July 1985 to March 1987 when concentrations in well MW-4 reached up to 550,000 ug/l over the same time period. In addition, chromium has not been detected in well MW-9 throughout 1992 and 1993 even though concentrations in well MW-4 have reached 80,300 ug/l over the same time period.

TCE in Soils: TCE has been detected in soils at the facility. TCE was detected in soil borings SB-7, RS-6, WMU 12-SB-1 and WMU 12-SB2. Maximum concentrations detected are as follows: SB-7: 4.8 mg/kg, RS-6: 110 mg/kg, WMU 12-SB-1: 0.200 mg/kg and WMU 12-SB2: 0.096 mg/kg. The highest concentration of TCE (110 mg/kg) was detected in surface soils at a depth of 3 feet in boring RS-6. Deeper soil samples from boring RS-6 were not analyzed for TCE because low photoionization detector readings

did not show that high concentrations of volatile organic compounds were present in the soil. These soil borings are located hydraulically up-gradient from where elevated levels of TCE was detected in the ground water (MW-4 and MW-9). This information will be made available to the LARWQCB for use in the future regional investigation of groundwater contamination.

Off-Site Soil Contamination: Significant PCB contamination was identified in the surface soils of the west parking lot area. The west parking lot is located off-site immediately to the west of the facility laboratory. This property, which was formally leased by PTI (then SCC), is owned by the Southern Pacific Railroad. It is not clear where the PCB's originated but PTI hypothesizes that they came from past operations when the site was used as a railroad switching station.

D. Surface Water

The major drainage in the project area is the San Gabriel River, which is located one mile west of the PTI facility. This river was once a source of irrigation in Santa Fe Springs and runs from the San Gabriel Mountains to the Pacific Ocean. It is now a flood control channel maintained by the Los Angeles County Flood Control District and is also used as a spreading ground to replenish ground water of the Montebello Forebay. North Fork Coyote Creek runs through the eastern part of Santa Fe Springs, some 3 miles southeast of PTI. It is also used for drainage and flood control.

Local Drainage

Locally, the PTI facility drains into an east-west treading drainage ditch which is adjacent to the southern boundary of the site and north of the Southern Pacific Railroad (SPRR) tracks. This drainage ditch is connected by a culvert under the SPRR tracks to the "unnamed" drainage ditch which is also east-west treading but south of the SPRR tracks. The "unnamed" drainage ditch originates west of Norwalk Boulevard and receives stormwater run-off from parcels both north and south of the PTI facility. From the unnamed ditch, local drainage is discharged into Sorenson Avenue Drain which is approximately 0.25 miles east of the facility. This drain feeds into La Canada Leffingwell Creek which flows into North Fork Coyote Creek and eventually into the San Gabriel River.

Although there is run-off from certain areas of the facility (e.g, office areas), surface drainage from PTI's process areas is reportedly captured in sumps, reused and treated on-site before being discharged into the municipal sewer system.

Surface Water Quality

Drainages in the project area direct surface water toward the San Gabriel River, which is located about one mile west of the PTI facility. Locally, the PTI facility drains into an east-west trending drainage ditch which is adjacent to the southern boundary of the site and north of the Southern Pacific Transportation Company (SPTCo) railroad tracks. This drainage ditch is connected by a culvert under the SPTCo tracks to another "unnamed" drainage ditch which is also east-west trending but south of the SPTCo tracks. Although run-off occurs from certain areas of the facility (e.g, office areas), PTI contends that surface drainage from its process areas are now captured in sumps, re-used, treated on-site and discharged into the municipal sewer system.

The "unnamed" drainage ditch originates west of Norwalk Boulevard and receives stormwater run-off from parcels both north and south of the PTI facility. From this "unnamed" ditch, local run-off is discharged into the Sorenson Avenue Drain which is approximately 0.25 miles east of the project site. This drain feeds into La Canada Leffingwell Creek which flows into other creeks and eventually into the San Gabriel River.

The two bodies of water which have the potential of being impacted by activities at PTI are the San Gabriel River and Coyote Creek. The detailed current and potential future uses of the two rivers are described in the Water Quality Control Plan from the Los Angeles River Basin, published by the Regional Water Quality Control Board (RWQCB). The RWQCB defines different type of uses which can be ascribed to surface waters. These uses are further delineated as existing beneficial water use, potential beneficial water use, or periodical beneficial water use in a watercourse with intermittent flow characteristics.

Coyote Creek is designated for potential future REC-1, WARM and WILD beneficial uses. For surface water designated for REC-1 beneficial use, the water quality objectives for bacteria is that the fecal coliform concentration for at least five samples taken over a 30-day period exceed a log mean of 200/100 ml, nor should 10 percent of all samples taken in a 30-day period exceed 400/100 ml. There are no specific water quality objectives mentioned for WILD beneficial uses; however, all water quality objectives discussed in the Water Quality Control Plan shall be applicable.

The San Gabriel River below Firestone Boulevard is designated for existing REC-1, and REC-2 beneficial uses and potential future WARM and WILD beneficial uses. The same water quality objectives discussed above are applicable here.

Dam Inundation

The project is located within the City of Santa Fe Springs which is 5 miles southeast and downstream of the Whittier Narrows Dam (an earth-filled dam built in 1956), 7.5 miles downstream of the Santa Fe Flood Control Basin, both constructed as part of flood control on the San Gabriel River. The City lies immediately east of the San Gabriel River flood control channel. In the event of dam failure, the water flow direction would be southerly towards a number of communities, including Santa Fe Springs. A water depth level of approximately 5 feet is predicted for the northernmost part of Santa Fe Springs with an arrival time of one hour. The projected inundation area would extend from the river to Norwalk Blvd. on the east. This inundation area would be expected impact most of the residential area of the City. However, PTI is located outside of projected inundation area approximately 1 mile from east of Norwalk Blvd., this project would not be affected.

Storm Flooding Hazards

Major flood control in the project area related to storms is under the jurisdiction of the Los Angeles County Department of Public Works Flood Control District. The District constructs and maintains regional storm drains and flood channels while the City of Santa Fe Springs constructs and maintains local storm drains to minimize flooding conditions. These City drains are generally designed for ten-year storms and are described in the City's Storm Drain Master Plan for existing and proposed local and regional storm drains. The City participates in the National Flood Hazard Insurance Program (NFIP). Under this program flood hazards have been determined based on 500- and 100-year storms. In compliance with NFIP, the City has adopted a Flood Damage Prevention Ordinance and construction in flood hazard areas is prohibited unless the flood hazards have been mitigated. The project does not lie within flood hazard area.

E. GROUND WATER

Regional

Geologic materials in the general area of the site are stream and flood plain deposits consisting of interbedded silts and sands with some clayey sequences. Although ground water is now encountered first at a depth of approximately 52 feet below ground surface (bgs) in the Hollydale Aquifer at the project site, it is overlain by the currently unsaturated Gage Aquifer and an intermediate low permeability horizon. Elsewhere in Santa Fe Springs the Gage is at least partially

saturtaed. The Hollydale Aquifer is approximately 30 to 40 feet thick at the project site and is considered a "leaky" confined aquifer. Ground water flow direction in the uppermost unit is toward the south-southwest. No definite vertical gradients were determined at the project site but may exist elsewhere. The Hollydale Aquifer is separated from the deeper Jefferson Aquifer (used for water supply) by a low permeability horizon of unknown variable thickness.

File
The LARWQCB Basin Plan designates all aquifers in the Santa Fe Springs area as municipal supply (MUN). State Water Resources Control Board Resolution 88-63 (Sources of Drinking Water Policy) states that all waters of the State (with a few exceptions) should be considered as sources, or potential sources of drinking water, and should be protected as such. State Water Resources Control Board Resolution 68-16 (Non Degradation Policy) typically requires remediation of a sites contribution to groundwater contamination. The EPA Region 9 Ground Water Policy supports California's position because it considers all groundwater with Total Dissolved Solids (TDS) levels below 10,000 mg/l as potential underground sources of drinking water. There is currently no evidence to suggest that the Hollydale aquifer has TDS levels greater than 10,000 mg/l.

Groundwater Resources

wells

The RFI indicated that there are 68 wells within 3 miles radius, based on the Los Angeles County Department of Water Resources Watermaster Reports, 1980 through 1990. Of the 68 wells, 27 are inactive or capped and abandoned, and the remaining are active. It should be noted that many wells may not have adequate seal between upper highly contaminated zones and deeper production zones. 14 of the active wells, are used for domestic water supply and 6 are used for irrigation purposes. The use of the remaining active wells are either for observation purposes or is unknown. 13 of the 14 domestic water supply wells are located upgradient and crossgradient of PTI. Only one downgradient well is located within one mile radius and is reportedly inactive in the 1980 to 1990 Watermaster Reports. 7 updradiant wells reported no water quality problems from 1987 to 1990. One upgradient well located at 1,250 feet northwest of PTI, to be used only for non-drinking and no-cooking purposes according Los Angeles Health Department directives, was found to contain 5.1 part per billion (ppb) of TCE and other organic contaminants, ranging from 0.5 to 5.0 ppb. Another Santa Fe Springs City owned well is located southwest of Dice Road and Burke Street, approximately 500 feet upgradient and north of PTI. The RFI indicated that 2.8 ppb of TCE was detected during October 1989 testing by the City. Four La Habra Heights County Water Company operated wells, about 1.5 miles due north of PTI, have

reported PCE contamination from non-detect to 6.4 ppb.

Site Hydrostratigraphy and Flow Regime

Groundwater is first encountered at a depth of approximately 52 feet below ground surface (bgs) in the Hollydale Aquifer. The groundwater gradient indicates that flow is toward the south southwest. No definite vertical gradients were observed. The Hollydale Aquifer is separated from the deeper Jefferson Aquifer (water supply) by a low permeability zone of unknown thickness. The Hollydale and Jefferson aquifers are probably connected because this deeper low permeability zone was not continuous across the site (not found in southwest corner, MW-15D).

Site Water Quality

A presently unsaturated zone, consistent with the Gage Aquifer, is affected by site-derived contaminants and water therein upon re-saturation would be under threat of pollution. The Gage is saturated elsewhere in the area. Ground water in the present uppermost saturated horizon beneath the facility, identified by PTI as consistent with the Hollydale Aquifer, contains elevated levels of: 1) heavy metals, including chromium and cadmium, 2) aromatic VOCs, including toluene, ethylbenzene, xylenes, 3) chlorinated VOCs, including TCE and 1,2-DCA, and 4) chlorides. Although this shallow ground water is not being heavily used as a source of drinking water, at least one public well is screened through it and it has other beneficial uses which are threatened by this contamination. Moreover, this unit appears to be in hydraulic continuity with the next lower unit, termed the Jefferson Aquifer, which has current large demand as drinking water. It is the determination of DTSC that PTI is responsible for most of the groundwater contamination which underlies its facility and that PTI may be responsible for contamination extending off-site and downgradient.

Water Rights

Ground water in the Santa Fe Springs area is adjudicated. That means that rights to pump and use ground water are restricted to parties to the adjudication, such as the Santa Fe Springs Municipal Water District. A court-appointed Watermaster allocates annual pumpage based on the adjudication and estimated safe yield. When dischargers such as PTI pollute or threaten to pollute ground water, they are literally damaging the water purveyors as business entities as well as harming the public. PTI is not known to be a party to the adjudication, therefore it will need to seek approval from the Watermaster for any extractive pumpage associated its groundwater remediation program.

F. Ecology

The City of Santa Fe Springs lies within central Los Angeles County, is highly urbanized and is surrounded by other highly urbanized cities. The California Department of Fish and Game's Natural Diversity Data Base (DFG, 1994) cites 3 plant and 6 animal species of special concern from the overall region encompassing the Santa Fe Springs area.

Wildlife

Common urban wildlife may be found within the project area. These are species that are tolerant of human disturbance and are capable of maintaining populations in urban and suburban environments. Such species include the mourning dove (*Zenaida macoura*), black phoebe (*Sayornia nigricans*), house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polyglottus*), house sparrow (*Passer domesticus*), and lesser goldfinch (*Carduelis psaltria*), western fence lizard (*Sceloporus occidentalis*), various mice (*Mus musculus* and *Peromyscus maniculatus*), coyote (*Canis latrans*), beechey ground squirrel (*Spermophilus beecheyi*), striped skunk (*Mephitis mephitis*), opossum and raccoon (*Procyon lotor*). Wildlife movement corridors, important as linkages between two or more habitat patches for free movement of animals for access to food and water, do not exist in Santa Fe Springs as per its General Plan Draft EIR. At one time the San Gabriel River functioned as an important natural wildlife movement corridor, but overall urbanization and channelization of the River has severely limited its function in this regard.

Vegetation

The majority of undeveloped lands within the City of Santa Fe Springs are located in oil field areas. These are described by the City as appearing to be vacant lots with disturbed (ruderal) plant communities and sparse non-native annual grassland. Small isolated patches of riparian scrub comprised of mulefat (*Baccharis glutinosa*) and willows (*Salix goodingii*) were noted by the City in its brief field survey. The City's General Plan identifies open space in its General Plan Update (1994) Open Space Element. The remainder, aside from the vacant lots, are local parks and ballfields, which may provide some habitat for urban wildlife.

Species and Communities of Special Concern

Although various sensitive species historically occurred along the San Gabriel River in the vicinity of the City, habitat no longer exists for them within Santa Fe Springs or at the project site. Such species include the least Bell's vireo

(*Vireo bellii pusillus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern pond turtle (*Clemmys marmorata pallida*), San Diego coast horned lizard (*Phrynosoma coronatum blainvillei*), etc. Southeast of Santa Fe Springs, in the west Coyote Hills area of Fullerton, the California gnatcatcher (*Polioptila californica*) and the coastal cactus wren (*Campylorhynchus brunneicapillus sandiegoense*) have been reported. Although reported from Santa Fe Springs in the recent past, the City claims that suitable habitat no longer occurs within its boundaries (Santa Fe Springs Draft General Plan EIR, 1994).

Several plant species that are being considered for listing as Threatened or Endangered by the U.S. Fish and Wildlife Service have been reported from the Santa Fe Springs area. The Los Angeles sunflower (*Helianthus nuttallii parishii*) and Parish's gooseberry (*Ribes divaricatum* var. *parishii*) which may occur north of the general area in the Whittier Narrows, and the many-stemmed dudleya (*Dudleya multicaulis*), which was reported from the Puente Hills northeast of the general area. None of these are expected to occur within the disturbed and developed areas that comprise the majority of Santa Fe Springs. The project site proper is in fact already paved over.

G. Cultural Resources

Historic Resources

Santa Fe Springs officially became a city in 1957--about the time that chemical manufacturing operations commenced at PTI (then Pacific Western Chemical Company) site. The area began as part of the Santa Gertrudes Rancho and was part of a vast cattle empire with some population inhabiting adobes in the area. Population gradually built up as a farming community until 1886, when the Santa Fe Railroad purchased land, laid out the first townsite. It still remained an agricultural-based community until an oil boom began in 1921 which totally made over the area. The present industrial base was initiated in a variety of oil service industries and even though the oil boom was over in the 1960's, post-WWII industrial growth had occurred, creating a small residential suburb with healthy industrial center.

Two sites are listed in the National Register of Historic Places, neither adjoins the project. The Directory of Properties in the Historic Property Data File (1993) indicates four other properties. None adjoin the site. The listings of the California Historical Landmarks (1990) of the Office of Historic Preservation, California Department of Parks and Recreation, do not indicate any California Historical Landmarks within City Santa Fe Springs. The highly developed nature of the City is such that relatively few historical

resources are identified. The project location does not appear to be among these and no potential for damage or loss of historical buildings and sites would result from the project.

Prehistoric Resources

One prehistoric archeological site, CA-LAN-182, was identified in the City. It was recorded in 1950 as "...an historic Gabrielano Village...", but the author of the record is unknown and there are three possible locations--apparently unconfirmed. A records search, performed for the City by the Archeological Information Center at UCLA Institute of Archeology, revealed that nine surveys and/or excavations have been conducted within, or immediately adjacent to, the City. Because of the sensitivity the archeological site locations were not released and it is not possible to directly evaluate the project site's spatial relation to any of these. Given the extensive site cover it is unlikely that any of these archeological resources would be at the project location.

H. Land Use

The City of Santa Fe Springs is dominated by industrial land uses with limited areas of residential use. In 1980, the City had 4,382 dwelling units, by 1990 there were an estimated 4817 dwelling units. The Land Use Element of the General plan anticipates that the population of the City will be 16,936 at buildout--the 1990 population was 15,200 but had been as high as 16,500 in 1960. This number was derived based on land use capacity assuming household size of 3.33 persons. This turns out to lower than population based on demographic projections. Nevertheless, the City's residential land use appears to be expected to remain about the same.

Only about 9% of the City's 5,500 acres is zoned for residential use. Despite this the 1974 General Plan calls for a community of low density, single family residential character. A land use pattern was proposed which was to contain residential use in the western part of the City near Telegraph Road. This was intended to protect residential areas from traffic noise and pollution associated with oil field and industrial activities located elsewhere. Facilities of a community nature were to be grouped near the center of the City and commercial uses were to be grouped convenient to the various neighborhoods. Some 579 acres of open space exists as a result of vacating oil fields.

I. Natural Resources

Relatively little in the way of natural resources is present

in the City of Santa Fe Springs, to some extent due the extensive development which it has undergone. The only open space is associated with abandoned oil field operations. Still producing oil fields are reported to exist between Bloomfield and Norwalk Boulevards on both sides of Telegraph Road. The project is located away from these oil and gas resources and will not have any effect on their extractability. Groundwater resources are discussed elsewhere but will be utilized and depleted to a minor degree during the groundwater cleanup. Note however that recharge both natural and artificial by such groups as the Water Replenishment District act to renew this groundwater resource. Moreover, by removal of relatively small volumes of contaminated groundwater, threat of pollution to much larger volumes is eliminated.

J. Risk of Upset

The City of Santa Fe Springs recognizes that hazardous materials can pose a threat to public health and cause environmental damage through inadequate and uncontrolled handling and disposal or illegal dumping of wastes. Since 1987, the City has had a Hazardous Materials Disclosure Program in effect. Those businesses handling acutely hazardous materials must file a registration form with the Fire Department and may be required to prepare a Risk Management Prevention Plan. An inspection program was implemented in 1988 to monitor hazardous materials through the City.

Approximately 600 facilities are reported to manufacture, warehouse or process hazardous materials and/or generate hazardous waste within or close to the City boundaries. The City recorded that during the years 1987 to 1991 approximately 79 reported significant hazardous materials incidents occurred within the city. These incidents affected the air, land, water, sewer system, stormwater system, rivers, creeks, the Los Angeles and Long Beach Harbors and Santa Monica Bay. Attribution of the main causes of the incidents was made variously to equipment failure, illegal dumping, operator error, natural phenomenon and transportation. Fixed facilities were responsible for about 74% of these incidents with another 14% accounted as pipeline ruptures. Only 6% was due to transportation accidents. The remaining 6% was spread among various miscellaneous causes.

In addition to the foregoing short term sample, the oil field and chemical production industry in the City has led to a large proportion of contaminated properties which represent a longer term problem. Forty six sites within the City have been placed in the EPA's Federal Superfund Program database of contaminated properties--including the project site.

K. Transportation/Circulation

The City of Santa Fe Springs is crossed by two major rail corridors, the Southern Pacific and Santa Fe Railroads. A Southern Pacific line adjoins the project site. Because of the industrial nature of the City, many freight trains haul various kinds of hazardous materials along these routes and onto numerous rail spurs. The San Gabriel River Freeway (I-605) and Interstate 5 run through the City. There is heavy truck traffic on both those routes. I-5 cuts the City with several on- and off-ramps, while the I-605 serves as a westerly bound. An average daily traffic evaluation was performed between April 1992 and October 1992. The heaviest traffic volumes were on the arterial system. These are cited in vehicles per day (VPD). Primary east-west arterial flow is provided by Telegraph Road (27,000 to 53,000 VPD), Florence Avenue (23,000 to 48,000 VPD), Washington Boulevard, Slauson Avenue (32,000 VPD) Imperial Highway (38,000 VPD), Rosecrans Avenue (23,000 to 33,000 VPD) and Alondra Boulevard (20,000 to 27,000 VPD). Primary north-south arterial travel is provided by Norwalk and Pioneer Boulevards, Carmenita (21,000 to 25,000 VPD) and Orr and Day Roads and Santa Fe Springs Road/Bloomfield Avenue and Valley View Avenue (26,000 to 25,000 VPD). Dice Road, on which the project is located does not serve as even one of the secondary routes for north-south travel. Norwalk Boulevard, nearest arterial to the site, at its closest measurement was running at 18,000 VPD.

According to the Multi-Hazard Functional Plan, the City assumes that one out of every 12 commercial vehicles is carrying hazardous materials. As an example, a large number of trucks and tankers haul gasoline, diesel and liquid propane gas from two refineries located within the City on a 24-hour per day basis. Only about 3.1% of the hazardous waste generators recycle their waste on-site, resulting in heavy off-site transport of hazardous waste. During 1987-1991, at least four traffic accidents in the City involved release of hazardous materials. The City states that most users of "virgin hazardous materials" and hazardous waste generators are geographically dispersed so that most of the major and primary arterials in the City are already used to transport hazardous waste. Total trip generation within the City as a whole is estimated at 433,522 ADT. The additional trips that would be generated by the project would be a very small proportion of this.

L. Public Services

A population growth rate between 1980 and 1990 of 6.9% meant that the City of Santa Fe Springs was slower than neighboring jurisdictions (14,521 in 1980 to 15,200 in 1990). Even though

it was slower than others, growth over this decade was relatively versus earlier decades for the City. In fact, between 1960 and 1990, the City still experienced a net decline in population of 980 (from 16,500 in 1960 to 15,200 in 1990). It is believed that an increase in multi-family housing stock occurred. Recent projections, cited in the City's General Plan Draft EIR, indicate that population will increase to 17,483 by the year 2010. A variety of public services are provided. Electricity and natural gas are discussed under energy; while water, telephone, sewerage, etc. are described under utilities; sheriff and fire protection are described under public health and safety. Amongst the services are the several school districts which provide educational services to the City. None of the schools in any of the districts are located near the project. Similarly, both library and parks are maintained, but are not proximal to the project.

M. Energy

Southern California Edison (SCE) supplies electricity to the City via overhead and underground lines. Average City residential consumption is some 580 kilowatts per hour while commercial/industrial varies over a wide range depending on product. The Southern California Gas Company services the City, and estimates the average consumption at 1,095 therms per year per single family dwelling.

N. Utilities

GTE California supplies telephone services. The Santa Fe Springs Municipal Water District is the retail supplier of potable water in the City. All water mains are located within the City streets, easements or public right-of-ways. The City maintains two 4-million gallon reservoirs. At least 45 percent of the water distributed is from wells and the remainder is supplied by the Metropolitan Water District. There are active City wells both up- and downgradient from the project. The City is located within the jurisdictional boundaries of District No. 18 of the Los Angeles Sanitation Districts and wastewater generated is served by the Joint Water Pollution Control Plant located in the City of Carson or the Los Coyotes Reclamation Plant located in the City of Cerritos.

O. Noise

Noise is usually defined as "unwanted sound". Sound intensity is measured in decibels (dBA) and noise in terms of dBA on a logarithmic scale. Ambient sounds range from 30 (very quiet) dBA to 100 dBA (very loud). A chart originally

presented by William Bronson in Ear Pollution (California Health, 1971) shows the range between hearing damage and physically painful as being 105 to 140 dBAs.

The City of Santa Fe Springs has a Noise Element in their General Plan. The specific goal of this element is to reduce the negative impact of noise on future developments by identifying major noise sources and compatible land uses. The City considers that industrial and manufacturing land uses are among those less sensitive to noise and recognizes the California's noise insulation standards which uses the 60 dBA Community Noise Equivalent Level (CNEL) contour as cutoff for requiring special acoustical analysis for residential structures located therein. A number of noise measurements were made throughout the City by a contractor to the City to determine major noise sources and noise sensitive receptors. Sites selected were worst case scenarios such as along major arterials and freeways and train movements on Southern Pacific rail line. Resulting ambient noise levels ranged from 53.5 to 77 dBA and noise levels exceeded 65 dBA at 25 of the 31 monitoring locations. This generally indicates an incompatible environment for sensitive noise receptors. Industrial zones were included with transportation as being major sources. A highway noise prediction model was used by the City to evaluate existing noise conditions throughout its jurisdiction. CNEL contours across the City were produced as a model output. The project site lies within the 70 dBA CNEL contour.

P. Public Health and Safety

The City of Santa Fe Springs contracts with the Los Angeles County Fire Department for fire protection and fire suppression services. The City of Santa Fe Springs Fire Department provides a complete group of emergency response services, including fire suppression, paramedic and environmental response. Currently four fire stations serve the City, one of which is located near the project on Dice Road. Crime protection for the City is managed by the City's Police/Community relations and its contract with the Los Angeles County Sheriff's Department.

Q. Aesthetics

Within the City of Santa Fe Springs, visual amenities include urban parks and landscaping. There are approximately 149 acres of public open space. The City has also identified nine visual corridors and has proposed special design treatment to preserve and enhance their visual character. It will be required that development in these areas provide for undergrounding of all utilities in compliance with the City's Master Plan. The nearest of these to the subject site is No.

5 - Norwalk Boulevard between Lakeland and Los Nietos Road. It is described as the roadway being reserved in the future for aesthetically pleasing industrial development with open space and landscaping and with all utilities to be underground. The project is located outside this area. The General Plan also has redesignated heavy industrial to mixed use industrial in three Special Study Areas which comprise about 580 acres. Master planning is recommended prior to development in order to convert their current use as undeveloped oil field and oil refineries to mixed use development in such a fashion as to provide visual amenity.

III. ENVIRONMENTAL EFFECTS

EARTH

This project does not depend upon or involve excavation, therefore, this project will not result in unstable earth conditions, changes in geologic substructures, destruction, covering or modification of any unique geologic or physical features, and any increase in wind or water erosion of soils, either on-site or off-site. There will be minor disruptions to the soil during installation of wells and treatment units; however, this will not have a substantial environmental impact because of the small area affected. This project may result in very minor changes in topography in order to achieve adequate drainage to collection points. Ground surface relief changes will be very minor, for example no more than the addition of the soil gas extraction and the ground water treatment systems which generally have very small footprint and are less than one-story high. This will not have a substantial environmental impact due to the small area and relative low height of the structures. The ground surface at well heads and at these low structures will be restored to the original level and grade after installation activities are completed.

The shallow soils at the facility which contain elevated concentrations of chromium, copper, lead, nickel and PCB's will be left in place by this project. Similarly the deeper hexavalent chromium detected in soil near the former waste chromic acid tank (etching wastes) area will not be removed. The combination of capping to prevent infiltration and human contact, deed restriction to avoid later unapproved removal and disposal of contaminated soil and changes in site usage and saturated and unsaturated zone monitoring to warn if contaminants become re-mobilized, is being used instead of excavation and removal.

AIR

The Basin is an area of high air pollution potential. Currently, federal and state standards for ozone, carbon monoxide, nitrogen dioxide, and suspended particulates are often exceeded in the Basin. Air quality impacts are usually determined according to the criteria set forth in the Federal, State and local pollution standards/regulations. Impacts are considered significant if project emissions meet any of the following criteria:

1. The project is capable of an increase in daily emissions that exceeds the following SCAQMD suggested threshold criteria:

<u>Pollutant</u>	<u>Threshold criteria</u>
ROG	55 lbs/day
CO	550 lbs/day
NOx	55 lbs/day
SOx	150 lbs/day
PM10	150 lbs/day

2. Project emissions increase ambient pollutant levels from below the KNACKS/CACAOS to above these standards.
3. Project is not consistent with the 1991 AMP.
4. Project exceeds the provision of significant deterioration (PSD) pollutant increment.

The Risk Assessment report estimated the exposure concentration in soil and air. The air concentration analysis included the estimation of suspended soil particulates during construction, volatile emissions from subsurface soils, estimation of on-site air quality conditions and estimation of on-site air concentrations of VOCs emitted from subsurface soil with no surface cap. Tables 3-1 through 3-9 in the Risk Assessment document provided detailed analysis results. This RA report indicates that the proposed clean-up project, which includes capping, will not adversely impact on the public health and environment. The air control units in the soil vapor extraction system will limit the emission to permissible levels as per SCAQMD permit.

WATER

The groundwater quality will be improved through the pumping and treatment system and the surface water will not be impacted through this project.

PLANT LIFE

The entire site is already developed with structures, floor covering, etc. No impacts to any plant life would result from this project. No mitigation measures are required.

ANIMAL LIFE

The entire site is already developed. No significant effects on animal life are anticipated as a result of this project. No mitigation measures are required.

NOISE

The stationary equipment on-site which are expected to be emplaced as a result of this project, primarily pumps and blowers may be expected to range from 68 to 85 dBAs--loud but not very loud ("Noise from Construction Equipment and Operations, Building Equipment and Home Appliances"-EPA, 1971). Moreover, sounds dissipate exponentially from a source and the site covers 4.5 acres thereby providing a noise "buffer" with respect to external effects. The Federal Highway Administration model utilized in the City's study assumes a standard 4.5 dBA sound attenuation with each doubling of distance. Therefore, the nearest residential area, at 1000 feet away, should be unable to distinguish project induced noise from the ambient. No large scale construction at the site is expected. No significant effect is anticipated from this project and no mitigation measure(s) is required.

LIGHT AND GLARE

No increase in light and glare to the surrounding area is expected. No mitigation measure is required.

LAND USE

The facility is within the M1 and M2 industrial zones. The facility are surrounded by approximately 123 hazardous waste sites, reported by Vista Environmental Information, Inc., a subcontractor of PTI to conduct a government records search of properties within one-mile radius of the facility. These sites included chemical companies, metal fabrication, finishing and plating companies, paint manufacturers, petroleum product manufacturers, gasoline service stations, waste disposal areas, and a wide assort of other types of industry (CDM, RA Report, October, 1992). Approximately one quarter of that area is zoned for residential and commercial use. The residential population is located mainly to the northwest of the facility with a few residences to the north and northeast. The closest residential area is 1,000 feet from the facility. The population in this one mile area is approximately 26,000. Also within this mile radius are seven

elementary schools, two high schools, and one child care center. The Nietos Child Care facility, the Rancho Santa Gertrudes elementary school, and the Jersey Avenue elementary school are located about one mile to the southwest of the facility. All of the other schools are located upgradient and northwest of the facility.

Access to the facility is limited to employees and contractors. The facility is surrounded by a fence and signs providing notification regarding the facility operations are posted in English and Spanish. The clean up project will not impact the land use purpose and will improve the soil and groundwater condition. The proposed project is in conformance to the current zoning designation and does not involve a change in land use. No mitigation measure is required.

NATURAL RESOURCES

The proposed project would utilize contaminated ground water as replacement for potable water currently used in its processes. This water would then be treated and discharged into the LACSD system. The volume is estimated at some 14,400 gallons per day (gpd). Although this is a use of natural resource, it acts to avoid more widespread depletion of natural resources by preventing existing soil and ground water contamination from spreading and impacting larger volumes of ground water. No mitigation measure is required.

RISK OF UPSET

The majority of the site is already mostly covered by buildings, asphalt and concrete. The capping required under the corrective action would complete the site cover and replace areas where it is currently degraded. This has the effect of further ensuring against any direct contact with contaminated underlay soils and preventing any potential emissions due to volatilization of subsurface contaminants. The vadose zone monitoring would indicate the performance of function of the vapor extraction and treatment system which would also act to eliminate soil emission to atmosphere. The groundwater usage at the site would be limited by deed restriction and threat to off-site groundwater quality would be improved through the removal of contaminant mass by the pumping and treatment system.

Risks might include: 1) Transportation of carbon absorption canisters after change-out, 2) malfunction of the vapor treatment system leading to vapor release into the atmosphere (this could be controlled by the alarm equipment installed in the system and air emission monitoring requirements).

An existing Department-approved site contingency plan describes the actions expected of each employee in the event of fire or other emergency including spill and fire control, evacuation plans, and coordination with the police and fire

departments. Providing that the facility complies with the contingency plan procedures, the risk from clean up of any hazardous waste at this location should be minimal. Despite the four year statistics and longterm site contamination, the City believes that the greatest risk of upset is from a transportation accident, therefore this project will not measurably increase risk of upset since the number of trips to be generated by the project will be negligible on an annual basis. No mitigation measures are required.

POPULATION

Because there are no significant land use changes proposed on the project, no additional impacts on the location, distribution, density or growth rate of the human population in the surrounding cities would occur. No mitigation measures are required.

HOUSING

The existing land use for this site would not change. The project would not result in any impact to the existing housing supply in the surrounding areas. No mitigation measures are required.

TRANSPORTATION/CIRCULATION

Since the existing land use is expected to remain the same and the corrective action does not include excavation and related truck traffic for removal, therefore the transportation/circulation system is not expected to be impacted. No mitigation measures are required.

PUBLIC SERVICES

No land use change is planned for the site. There would be no impact on existing public services such as police, fire, and schools, nor would the project require new services in the area. No mitigation measures are required.

ENERGY/UTILITIES

The proposed project would be operated at the existing site and would not result in the installation of additional fuel and energy sources. No mitigation measures are required.

HUMAN HEALTH

The Risk Assessment Report (CDM, October 1992 & April 1993) indicated that the majority of the site is covered by building, concrete or asphalt which effectively eliminate any potential worker exposures through contact with contaminated surface and subsurface soils. The only potential exposure for on-site workers would be through incidental ingestion of soil,

and inhalation of fugitive dust from the adjust Drainage Ditch Area. The overall hazard index (HI) for the on-site worker from the Drainage Area is 1.86×10^{-1} which suggests long-term exposure to contaminated surface soils in the Drainage Ditch Area would not be expected to result in adverse health effects. The total incremental cancer risk for the site worker, 9.17×10^{-7} is below minimis and would be considered insignificant. Based on this Risk Assessment report routine operations of the facility are not expected to cause health effects, and no mitigation measures are required.

The Risk Assessment Report has included the toxicity assessment which has two major components: hazardous identification and dose-response evaluation. The toxicity profiles provide the following information: toxico-kinetics, qualitative description of health effects, quantitative description of health effects, and summary of health criteria.

AESTHETICS

No aesthetic impact would result from the project. No mitigation measures are required.

RECREATION

Since there are no use changes proposed on the site, recreational opportunities in the area would not be affected. No mitigation measures are required.

CULTURAL RESOURCES

The project site is already developed. No impact to the cultural resources would occur nor cultural artifacts have been noticed at this site. No mitigation measures are required.

Mitigation Measures

The chances of any migration of hazardous waste to the soil and ground water are very low because this project is to clean up the soil and ground water contamination by the soil vapor extraction system and ground water treatment system which will limit the migration of any hazardous waste.

IV MITIGATION MEASURES

The potential impacts resulting from the implementation of this proposed project are minimal and no additional mitigation is required.

V MANDATORY FINDINGS OF SIGNIFICANCE

The implementation of the proposed project does not have the potential to degrade the quality of the environment or eliminate any biotic resource, or destroy any examples of California history or prehistory. The potential for adverse effects on human life is discussed in the Risk of Upset. The project site has been utilized as a hazardous waste storage facility since 1978. The proposed project is intended to improve the environmental safety of the present site condition.

VI REFERENCES

1. Special Publication 42, Fault-Rupture Hazard Zones in California, Revised 1988; California Department of Conservation, Division of Mines and Geology.
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3. Preliminary Assessment, Southern California Chemical Company (SCC), Santa Fe Springs, November 30, 1987; Department of Health Services [now, Department of Toxic Substances Control (DTSC)].
4. RCRA Facility Assessment, SCC, September 1987; Kearney, A.T. Inc.
5. RCRA Facility Phase I Investigation, SCC, December 6, 1991, Revised March 10, 1992 and March 29, 1992; Camp Dresser & McKee Inc. (CDM)
6. RFI Phase II Report, SCC, February 4, 1993, CDM.
7. Corrective Measures Study, SCC, August 27, 1993, CDM.
8. RCRA Facility Risk Assessment Report, SCC, October 29, 1992 & April 23, 1993, CDM.
9. Additional Subsurface Soil and Groundwater Assessment Report, for Pilot Chemical Company, July 1991, Kleinfelder, Inc.
10. Workbook for conducting Initial Studies under the California Environmental Quality Act (CEQA), DTSC, May 1994.
11. SCAQMD CEQA Air Quality Handbook Training Handouts, April 1993.
12. Santa Fe Springs General Plan Update Environmental Impact Report, September 07, 1994.